

Improvements in or relating to thermal supervisory apparatus

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Inventor:

Applicant: SIEMENS AG

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- international:

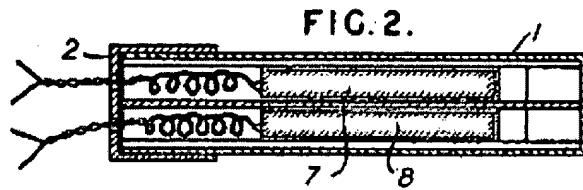
- european: H02K11/00E

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Priority number(s): DEX767383 19540317; DEX334788 19540317;
DEX1120900 19540317

Abstract of GB767383

767,383. Temperature indicators for dynamo-electric machines. SIEMENS-SCHUCKERT-WERKE AKT.-GES. March 17, 1955 [March 17, 1954], No. 7885/55. Class 35. Thermally-sensitive elements 7, 8 are housed in a tube 1 embedded in the windings of a dynamo-electric machine and closed by a cover 2.



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PATENT SPECIFICATION

767,383



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International Classification:—H02k.

COMPLETE SPECIFICATION

Improvements in or relating to Thermal Supervisory Apparatus

We, SIEMENS-SCHUCKERTWERKE AKTIEN-
GESELLSCHAFT, a German Company, of Ber-
lin and Werner-von-Siemens-strasse 50, 13a
Erlangen, Germany, do hereby declare the in-

5 vention, for which we pray that a patent may
be granted to us, and the method by which
it is to be performed, to be particularly de-
scribed in and by the following statement:—

10 The invention relates to thermal super-
visory apparatus for use with an electric wind-
ing such as an electric machine winding or the
like.

15 For the thermal protection of the windings
in electric machines, thermostats are firmly
embedded in the machines as tripping-
elements (for example in the form of a
thermo-couple or of a bimetallic trip), so that
they may be directly influenced by the thermal
state of the windings and, in the event
20 of an inadmissible thermal load (when a par-
ticular temperature is exceeded) may effect
the disconnection of the winding. An un-
favourable feature has been found to reside
in that when such a built-in thermostat breaks
25 down the associated winding must to a large
extent be dismantled.

It is an object of the present invention to
overcome this disadvantage.

According to the present invention there is
30 provided a thermal supervisory apparatus for
use with an electric winding such as an elec-
tric machine winding or the like, comprising
a sleeve adapted to be located in the electric
winding to be supervised, and one (or more)
35 thermostat(s), the interior of the sleeve being
shaped to allow at least one such thermostat
to be mounted and held in, or removed from,
the interior of the sleeve as an independent
unit.

40 The sleeve has such an external form that
it is firmly seated in the winding and is in
intimate contact therewith, while the internal
form of the said sleeve is adapted to the asso-
ciated thermostat. Various types of thermo-
45 stats, if desired having different sensitivity or
different response temperatures, may be pro-
vided which fit into the same sleeve. In addi-

tion, a unit adapted to be fitted into the
sleeve may be formed from a number of
individual thermostats having different re-
sponse temperatures. 50

For a better understanding of the inven-
tion and to show how the same may be
carried into effect, reference will be now
made to the accompanying drawing in 55
which:—

Figure 1 shows a perspective view of a
sleeve,

Figure 2 shows diagrammatically in section
a sleeve having two thermostats fitted there-
in, and, 60

Figure 3 shows a part of a machine wind-
ing with a sleeve fitted therein.

Referring now to the drawing, in Figure 1,
a sleeve which can be referred to as a hold-
ing sleeve is designated by 1 and an asso-
ciated closure cap adapted to be fitted there-
on is designated by 2. The holding sleeve has
externally at 3 and 4 beads and at 5 trans-
verse grooves. By virtue of this external
shape, the holding sleeve can be firmly held
in a winding, and it may without difficulty
be adapted to the particular winding con-
cerned. 70

The closure cap has apertures designated
by 6 for the passage of connecting conductors
for a thermostat to be fitted in the holding
sleeve. Contact sockets for the reception of
an electrical plug may also be fitted in the
apertures. Other constructional forms of the
closure cap are also possible. For example, it
may be adapted to be screwed on. 75

In Figure 2, a holding sleeve is again
designated by 1, a closure cap by 2, a trans-
verse groove by 5 and apertures for the intro-
duction of connecting conductors by 6. In the
present example, two thermostats designated
by 7 and 8 are provided. For their spatial
separation, a wall 9 is provided. 10 and 11
are connecting conductors for the thermostats. 85

The external form of the thermostat or
thermostats and the internal form of the
holding sleeve 1 are so adapted to one another
in each case that the thermostat or thermo- 90

[Price 3s. Od.]

stats is or are firmly located in the sleeve in such a manner as to be largely insensitive to shock and vibrations.

Figure 3 shows how a holding sleeve can be fitted in the winding of an electric machine, for example of a motor or generator. The machine body is designated by 21, a machine winding by 22, a holding sleeve by 23 and connecting conductors for the thermostat fitted in the holding sleeve by 24. A closure cap 23a may be removed from the holding sleeve, while the holding sleeve itself is mounted firmly in the winding. With this arrangement, it is possible to remove the closure cap without difficulty and to fit or replace a thermostat as a whole without any appreciable expenditure of labour and time being necessary.

In addition to its application to machine windings, a holding sleeve of the form described may with advantage be applied to similar arrangements in which a thermal supervision or limitation is necessary and in which the exchange of a securely fitted thermostat would only be possible with a relatively great expenditure of time.

What we claim is:—

1. A thermal supervisory apparatus for use with an electric winding such as an electric machine winding or the like, comprising a sleeve adapted to be located in the electric

winding to be supervised, and one (or more) thermostat(s), the interior of the sleeve being shaped to allow at least one such thermostat to be mounted and held in, or removed from, the interior of the sleeve as an independent unit.

2. An apparatus as claimed in claim 1, wherein the external form of the sleeve is so shaped that it can be reliably held in position by the electric winding to be supervised.

3. An apparatus as claimed in claim 1 or 2, wherein the interior of the sleeve and the external shape of the or each thermostat are arranged to be adapted to one another in such a way that one such thermostat can be firmly mounted in the sleeve so as to be insensitive to shock and vibration.

4. An apparatus as claimed in any one of the preceding claims, wherein the sleeve is designed to receive two or more thermostats simultaneously.

5. A thermal supervisory apparatus for use with an electric winding such as an electric machine winding or the like, substantially as hereinbefore described with reference to, and as illustrated by, the accompanying drawings.

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767,383 COMPLETE SPECIFICATION
1 SHEET
*This drawing is a reproduction of
the Original on a reduced scale.*

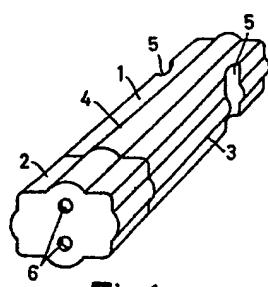


Fig.1

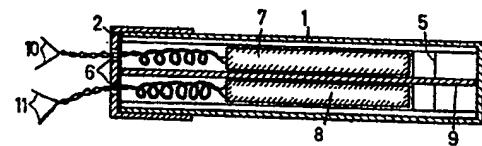


Fig.2

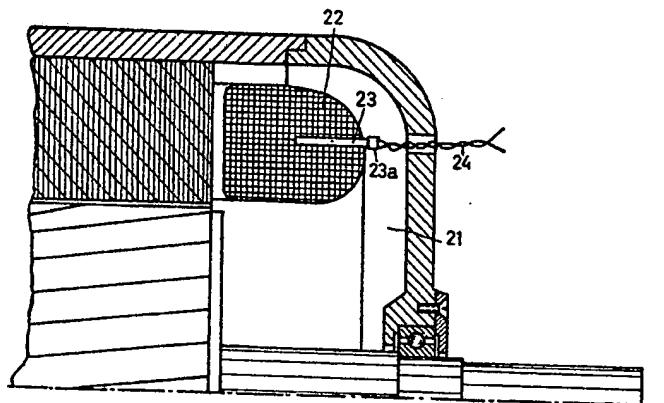


Fig.3